O&S ASSOCIATES
ENGINEERS & ARCHITECTS

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PENTHOUSE TOWERS CONDOMINIUMS

NEW HIGHLAND BEACH INSPECTION REQUIREMENT

Architecture
Structural
MEP/FP
Restoration
Parking

Exterior Envelope
Energy
Studies
Expert Witness
Regulatory & Compliance

SEPTEMBER 11, 2023

Submitted By:

O&S Associates, Inc.
2500 Hollywood Blvd
Suite 212
Hollywood, FL 33020
305.676.9888

Submitted To:

Penthouse Towers Condominiums
3101 S. Ocean Blvd
Highland, FL 33487
C/O Elaine

September 11, 2023 Sent Via Electronic Mail

Penthouse Towers Condominiums
3101 S. Ocean Blvd
Highland Beach, FL 33487
Folio #: 24-43-46-33-3307-0000-XXX

C/O Elaine
Property Manager
561-278-8092
officepenthouse@comcast.net

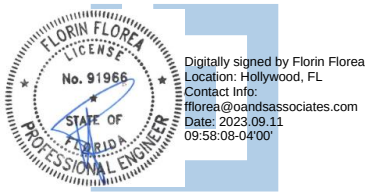
Re: Penthouse Towers Condominiums
New Highland Beach Inspection Requirements

Dear Ms. Elaine:

O&S Associates, Inc. has completed the Building Condition Assessment and Engineering Report of Penthouse Towers Condominiums. This report was prepared in accordance with the scope of work and limitations included in this report.

Please review the attached findings and contact us at your convenience to discuss the report or any questions you may have.

Respectfully,
O&S Engineers & Architects



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EXECUTIVE SUMMARY

Penthouse Towers Condominiums retained O&S Associates, Inc. to perform an electrical inspection of the residential building. Pursuant to the requirement of the Highland beach new building recertification inspection, ordinance No. 2021-011. Our site visit included visual inspection from electrical/meter rooms, generator room, elevator machine rooms, pump rooms, catwalks, lobbies, elevator lobbies and staircase.

The electrical distribution system is presently in a serviceable condition, but includes antiquated components that have since been found to be unsafe. The panels are manufactured by Zinsco and Federal Pacific. These panels may not trip during overloaded conditions creating a risk for fire. They should be replaced.

There are also unsafe conditions regarding the Exit Signs, Pull Stations and other life safety components. These components need to be repaired and tested by properly qualified and licensed contractors.

We have also recommended other repairs to be provided which are discussed in the report.

INTRODUCTION

AUTHORIZATION

O&S Associates, Inc. (O&S) was retained by Penthouse Towers Condominiums to perform an electrical evaluation of the building per our proposal dated August 10, 2022.

OBJECTIVE

O&S understands that Penthouse Towers Condominiums Association is aware of some deterioration at their building and desires an electrical engineering consultant to complete an electrical evaluation of the building, and provide an opinion of the electrical condition, and offer recommendations for a repair program. This report provides a condition assessment of the electrical elements of the building. The observed conditions were evaluated to the extent required to develop a conceptual repair program.

Note that we did not observe 100% of electrical components of the building. Our findings are extrapolated from the results of our observations of a portion of the building.

SCOPE

The scope of work performed to date of the electrical evaluation of Penthouse Towers Condominiums includes:

1. Visually observe the electrical components or conditions, and other incidental appurtenances related to determining the condition of the electrical system, in accordance with the checklists and forms issued by the Town of Highland Beach.
    a. Electrical rooms, elevator rooms, pump room/generator room, and pool pump room.
    b. Life safety system, fire alarm system, and electrical panels.
2. O and S Associates did NOT inspect any electrical component inside the units.
3. Compile a report with recommendations, and photographic documentation.

GENERAL PROPERTY DESCRIPTION

Penthouse Towers Condominiums is a 10-story building built-in 1969. There are two main electrical rooms and two elevator rooms, north and south. The main service is 3000 amps for each side of the building. Fire alarm system, pool pump room, and generator room are some additional electric features that this building has.

ELECTRICAL OBSERVATIONS & RECOMMENDATIONS

INTRODUCTION

This section of the report contains a summary of the conditions observed regarding the safety assessment of the building's electrical systems. Specifically, we assessed the following components with respect to immediate danger in general conformance with published standards such as New Highland Beach Requirements:

1. Main Service

2. Meter and Electrical Room
3. Gutters, Raceways, Bus Ducts
4. Electrical Panels
5. Branch Circuits
6. Grounding Service
7. Equipment Grounding
8. Service Conductors, and Raceways
9. Emergency Lighting
10. Exit Signs
11. Fire Alarm System
12. Swimming Pool Area Wiring
13. Mechanical Wiring

LIFE SAFETY SYSTEM – COMMON AREAS

The Penthouse Towers Condominiums includes an existing fire alarm system comprised of a mixture of the following detection and notification devices:

- Area Smoke and Heat Detectors
- Pull Stations
- Horn/Strobe Lights

The common areas on a typical condominium floor contains a combination of horn/strobe light and, as well as ceiling mounted heat detectors in elevator lobbies, and manual pull stations located within the catwalks, or near the stairs. In addition with the common areas fire alarm system, there are a ceiling mounted smoke detector in generator/pump room (where the fire alarm panel is located), and horns inside the units.

1. Some pull stations provided within the building near the stairs were observed not to have a weatherproof cover. The installation of weatherproof cover on fire alarm pull stations is critical to ensure they work properly. The location of missing weatherproof cover on pull stations was at 1st, 3rd, 6th Floors North Stairs.
2. O&S has observed that exit signs have passed their useful life and require replacement in order to be properly illuminated as per the NFPA-101, Chapter 7, Section 7.7.3.2 & 7.7.4 and, Florida Building Code, Building, Chapter 27, Section 2702.2.6 requirements. In general, the exit signs were evaluated to have exceeded their service life of eight-years and it is recommended that they all be replaced. Additionally, they are required to be tested for 30-seconds monthly, and 90-minutes annually.
3. Entry door and frame were observed to be missing fire resistance rating signs in all Electrical/Meter Rooms. NFPA 80 requires that all fire door openings obtain a fire rated certification label that is clearly visible for AHJ[1]. These signs are not to be removed nor painted over, during the life of the structure. As all the Electrical/Meter Rooms have an approved fire sprinkler system, the doors and frames can be 1-hour fire rated according to NFPA.

Fire alarm testing and repair may therefore require that other trades or contractors be retained to fully verify a functional system. The assessment or inspection of related or connected systems is beyond the scope of this study.

[1] The designated facility authority that has jurisdiction; the organization responsible for code and standard reinforcement, set by NFPA.

COMMON AREA ELECTRICAL SYSTEMS

Electrical Panels and Related Equipment:

Zinsco and Federal Pacific electrical equipment are unreliable and therefore should be considered unsafe unless tested. Zinsco and Federal Pacific Panels uses a clip-on connection between the breakers and aluminum bus bar. They have a higher than usual rate of failure, due most often to loosening of the connection between the bus bar and breakers. When this happens, it causes arcing and overheating in the area, which leads to melting of the metal, with breakers permanently welded to bus bar and impossible to remove. Secondary problems are failure of the breaker to trip under an overcurrent event and cases of a tripped breaker continuing to be energized. The repair options are to either periodically evaluate with an infrared camera and repaired as required or remove and replace them entirely as a safety precaution. In this case, Zinsco and Federal Pacific manufactured equipment were evaluated to be passed its useful life and O&S recommend having it replaced.

We observed that existing outlets in Kitchen on 1st floor, Laundry Rooms, Roof, Cooling Towers North and South, Pool Pump Room and exterior outlets around the building are not GFCI[2] nor has a weatherproof cover. In addition, we recommend all Unit Owners to immediately replace all non-compliant outlets as soon as possible at kitchens, bathrooms, and balconies.

We observed that some electrical equipment need to be labeled such as: Distribution Panel in Lower Level North Electrical Room; Main Distribution Panels (800A) in 1st, 3rd, 5th, 7th, 9th Floors in North Electrical Rooms; Distribution House Panel and Panel SE-1 in Lower Level South Electrical Room; Main Distribution Panels (600A) in 1st, 5th, 7th, 9th Floors in South Electrical Rooms; Control Box and Electrical Panel in Cooling Towers North and South; Distribution Panel and Disconnect Switch in 1st Floor Office; Disconnect Switch, Distribution Panel, Dial Time Switches, Transformer Boxes, and Pool Pump in Pool Pump Room.

We noticed that there are some electrical panels with same label in the same electrical room: Electrical Panel NH-2 in 3rd floor North Electrical Room, Electrical Panel NH-3 in 7th Floor North Electrical Room, Electrical Panel SH-2 in 3rd Floor South Electrical Room, and Electrical Panel SH-3 in 7th Floor South Electrical Room. O&S recommend having a new label on those electrical panels.

We observed that some Electrical Rooms from 1st floor through 9th floor north and south sides need to be labeled. O&S recommend Pool Pump Room to be labeled as well.

O&S observed that some electrical panels need branch circuit identification such as: Electrical Panels NH-2 (2), and NTC-2A in 3rd Floor North Electrical Room; Electrical Panels NH-3 (2), and NTC-2B in 7th Floor North Electrical Room; Electrical Panel SE-1 in Lower Level South Electrical Room; Electrical Panels SH-2 (2), and STC-2A in 3rd Floor South Electrical Room; Electrical Panels SH-3 (2) in 7th Floor South Electrical Room; Electrical Panel in 1st Floor Office.

[2] The ground fault circuit interrupter (GFCI) outlet is a device that "trips" at a very low current flow during an electric shock in order to prevent any electrocution accidents – providing optimum safety for residents and protection to a circuit. Building codes within Florida now require a GFCI outlet be installed in wet/damp locations such as bathrooms, kitchens, laundry rooms, and outdoors (such as balconies). Outdoor GFCI units should include a weather-proof covering which allows a cord to be plugged in while also protecting against any water infiltration. GFCI devices should be tested monthly to ensure that the device is working properly.

O&S observed that some electrical panels have unused breaker spaces and/or unused knockouts, this can cause potential exposure to live electrical equipment and Arc Flash and Shock Hazard. Electrical Panel NH-3 in 7th Floor North Electrical Room; Electrical Panel SE-1 in Lower Level South Electrical Room; Electrical Panel SH-2 in 3rd Floor South Electrical Room; Electrical Panels SH-3 (2), and STC2-B in 7th Floor South Electrical Room. It's recommended to install breaker blank fillers and/or KO seals respectively.

O&S observed that some Electrical Rooms and the Generator/Pump Room are being used as storage room. According to NFPA-1 Chapter/Section 10.18.5 spaces such as boiler rooms, mechanical rooms, or electrical rooms are designed for a particular purpose and should not be seen as an opportunity for free storage within a building. Storing combustible materials within one of those spaces increases the risk and also the fuel load within the space should a fire occur. Controlling the combustible storage in these spaces can help to lessen the risk of a fire developing and/or interfering with the boiler equipment, mechanical equipment or electrical equipment. Materials that are not associated with the equipment are not permitted to be stored within equipment rooms.

Some additional issues were found in electrical rooms, cooling towers, roof, pool pump room, laundry rooms, and electrical equipment that needs attention:

- Open junction boxes need to be properly closed.
- Junction boxes are severely rusted in the Lower Level North Electrical Room, and Cooling Towers North and South, and should be replaced.
- Lower Level Electrical Rooms North and South have some water leaking from sewer plumbing, it needs to be verified by a plumbing contractor.
- Electrical Panel Door should be properly installed on Electrical Panel SH-3 in 7th Floor South Electrical Room.
- In the Pool Pump Room conduits should be over the floor.
- The pool water heater right outside the Pool Pump Room should have electrical conduits over the floor.
- One heavy duty outlet is damaged and should be replaced in Laundry Room 2nd Floor South.
- Cooling Tower South: Open conduit with exposed wires should be fixed. Old and rusted water pumps should be replaced. Control Box: Rusted support needs to be replaced. Non-working fan inside control box should be replaced. Inside the control box should be cleaned. The weatherproof rubber around the door is weatherized and should be replaced. Inside the control box has an extremely oxidized disconnect with fuse that must be replaced. Electrical Panel: It should be properly cleaned.
- Cooling Tower North: Open conduit with exposed wires should be fixed. Old and rusted water pumps should be replaced. Control Box: Rusted support needs to be replaced. Inside the control box should be cleaned. Inside the control box has an extremely oxidized disconnect with fuse that must be replaced. Electrical Panel: It should be properly cleaned.

Switch Gear/Main Gear:

The electrical switch gear includes a variety of devices that are used to regulate, meter, and control the electrical system. Without maintaining these components, the system is at risk to be harmed by electrical surges and for the system to malfunction.

It is our experience however that switch gear components wear out and fail over time. The switch gear includes an array of mechanical parts and springs. It is important to have them cleaned, lubricated, and exercised. Annual visual and thermographic inspections on bus connections and breakers are also important maintenance items. The main gear at these building do not appear to have been cleaned, serviced, or exercised. The housings are corroded. The gear should be opened and evaluated by a qualified electrician.

Disconnect Switches:

The electrical systems for the building include electrical disconnects, which serve equipment throughout the property, such as pumps for fire protection, plumbing, and the pool. Many of these disconnect switches are corroded and are visually in poor condition. These disconnects are required by code in many cases and need to be maintained or replaced so the equipment can be safely serviced and protected. Rusting/corrosion occurs when these panels are frequently exposed to moisture. Failure to address rusting within panels risks the possibility of decrease in function of the panel due to an interference with conduction of electricity - potentially creating a fire hazard.

Ground Bar:

The ground bar is an essential electrical component critical to the building's grounding system. O&S observed that it was weatherized and needs maintenance. We also recommend that this system be megger tested by an electrician and replaced if necessary. Failure to address these conditions can create a safety hazard and damage to the current electrical system by restricting the diversion of external current into the ground.

Fire Stopping:

We observed that there are unsealed openings in the walls, ceilings and floors in the building, representing a fire-stopping hazard, such as: North electric/meter rooms on Lower Level, 1st floor, 3rd floor, 9th floor; South electric/meter rooms on Lower Level, 1st floor, 3rd floor, 5th floor, 7th floor, 9th floor. These openings need to be closed and/or fire-caulked to restore the fire-resistance of the wall, ceiling and floor assembly at penetrations as required by Fire Safety Codes. All common area closets with electrical, plumbing, or other risers or penetrations should be reviewed to ensure there are no unsealed gaps in the floor-to-floor fire-stopping.

ACCURACY, LIMITATIONS, AND DISCLOSURES

This report contains professional opinions based on conditions observed as of the dates of inspection. This report is believed to be accurate with the limitations of the stated methods for obtaining information. Nothing in this report shall be interpreted as any kind of guarantee or warrantee because we have no control over future events. This report is not intended to be a discourse on safety nor shall it be used as a specification.

We developed this report to assist in the budgeting for repairs and maintenance related to long-term ownership. Critical statements made in this report on the condition of the property may not be used to justify criticism of previous design professionals, contractors, or anyone responsible for the building. This inspection does not include the examination of building areas for hazardous materials, or for building code, fire or safety violations.

A review of the facility for ADA compliance was not included in the scope of this project since ADA compliance is a legal determination and not an architectural or engineering finding.

The evaluation required that certain assumptions be made regarding existing conditions, and some of these assumptions cannot be verified without expending additional sums of money or destroying otherwise adequate or serviceable portions of the building. The extent of our evaluation was limited to visual observations and the scope of work indicated in this report. We cannot guarantee that the appraisal discovered or disclosed all possible latent conditions.

The report is not for the benefit of or use by others without the written permission of O&S ASSOCIATES. We summarized the evaluation and recommendations in this report for use with additional fiscal and technical judgment. Use of this report without our permission and guidance may lead to erroneous action for which the user shall bear full responsibility.

ATTACHMENT LIST

ATTACHMENT A – PHOTOGRAPHIC DOCUMENTATION